Employing a Decision Support Tool to Assist Older Patients Considering Surgery for Rectal Cancer

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Background

- Surgery is the mainstay for treatment of rectal cancer.
- Older patients may consider age a detriment when considering surgery.
- Frailty is considered a risk factor for adverse surgical outcomes.
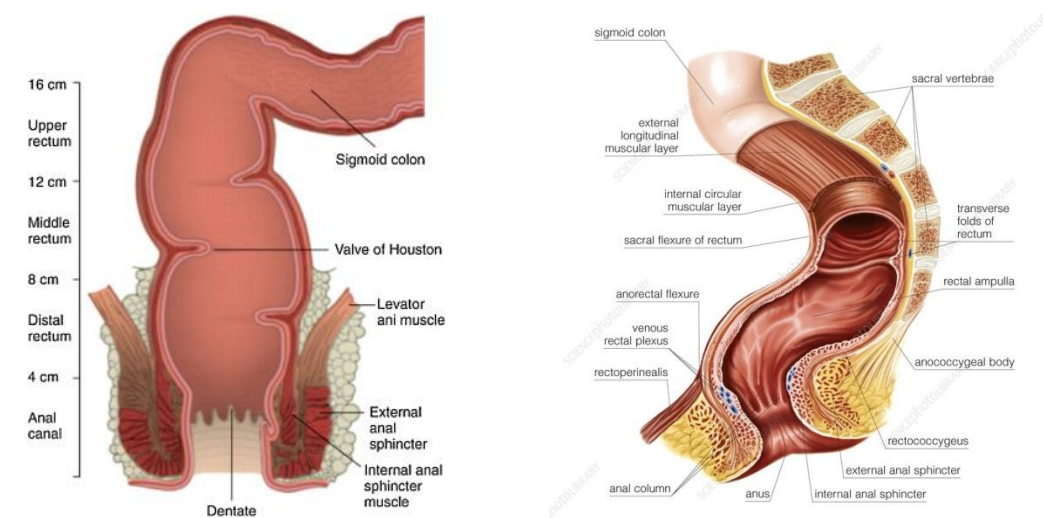
Question

Should frailty be discussed with a patient, regardless of age, when considering outcomes for patients with rectal cancer?

Methods

Patients with primary rectal cancer who had surgery

American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) data base (2012-2015) using ICD9/10 codes

Age categories:16-64, 65-79, 80-89 years

Simplified Five-Item Frailty Index (sFI) used to form groups into 0,1,2 and 3 or more frailty characteristics

Frailty Characteristics

History of diabetes mellitus

Functional status

History of congestive heart failure

Hypertension requiring treatment

sFI=0 is least frail and sFI $\geq$3 is most frail

ACS NSQIP definitions for postoperative morbidity/complications (at least one)

Infection	Acute renal failure
Pneumonia	CVA
Unplanned intubation	Myocardial infarction
Pulmonary embolism	DVT
Ventilator requirement > 48 hours	Septic shock
Renal insufficiency	Return to operating room

Results

- 9,289 patients in analysis

Category sFI	Morbidity	Mortality
0	9.4%	0.1%
1	14.8%	1.0%
2	19.2%	1.6%
$\geq$3	42.1% (p<0.001)	6.9% (p<0.001)

- Covariate-adjusted logistic regression modeling showed:
  - Oldest age not independently associated with morbidity when adjusting for frailty
  - Persons most frail (sFI $\geq$3) had highest morbidity

Covariate-adjusted * Morbidity and Mortality Odds Ratio For Frailty and Age in Patients with Rectal Cancer

	Morbidity	Mortality
Most frail vs. least frail **(>3 vs. 0 frail characteristics)**	Odds Ratio = 6.7 95% CI = (4.50, 10.0) P < 0.0001	Odds Ratio = 18.8 95% CI = (5.60, 63.1) P < 0.0001
Oldest age vs. youngest age **(80-89 vs. 18-64 years)**	Odds Ratio = 1.2 95% CI = (0.98, 1.53) P < 0.10	Odds Ratio = 8.9 95% CI = (4.27, 18.5) P < 0.0001

Covariates included for adjustment: race, smoking and functional status (dependent vs. independent)

- Both older age and frailty independently associated with higher mortality (sFI$\geq$3)
- Frailty more strongly associated with mortality

Conclusions

- **Frailty is more strongly associated with both morbidity and mortality than older age in patients undergoing proctectomy.**

- **Surgical options can be presented to older patients with the use of sFI as a decision-making tool.**

- **Advanced practice nurses can use decision-making tools to help their patients understand risks and benefits of surgery for rectal cancer.**

References

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